



## **Value Stream Mapping in healthcare: ergonomic implications and the significance of adding an ergonomic module - The NOVO Multicentre Study I**

**Winkel, Jørgen; Edwards, Kasper; Jarebrant, Caroline; Birgisdóttir, Birna Dröfn; Johansson Hanse, Jan; Harlin, Ulrika; Ulin, Kerstin ; Gunnarsdóttir, Sigrún**

*Published in:*

Discussion Paper: The 12th NOVO symposium Care integration, systems reform and sustainability in health care

*Publication date:*

2018

*Document Version*

Publisher's PDF, also known as Version of record

[Link back to DTU Orbit](#)

*Citation (APA):*

Winkel, J., Edwards, K., Jarebrant, C., Birgisdóttir, B. D., Johansson Hanse, J., Harlin, U., Ulin, K., & Gunnarsdóttir, S. (2018). Value Stream Mapping in healthcare: ergonomic implications and the significance of adding an ergonomic module - The NOVO Multicentre Study I. In *Discussion Paper: The 12th NOVO symposium Care integration, systems reform and sustainability in health care* (pp. 20-21)

---

### **General rights**

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.



NATIONAL INSTITUTE  
FOR HEALTH AND WELFARE

Tuulikki Vehko  
Marjukka Laine  
Timo Sinervo (eds.)

DISCUSSION PAPER

# The 12th NOVO symposium Care integration, systems reform and sustainability in health care

Helsinki, 15-16 November 2018

**Discussion paper 30/2018**

Tuulikki Vehko, Marjukka Laine, Timo Sinervo (eds.)

**The 12th NOVO symposium  
Care integration, systems reform and  
sustainability in health care  
Helsinki, 15-16 November 2018**



NATIONAL INSTITUTE  
FOR HEALTH AND WELFARE

© Author(s) and National Institute for Health and Welfare

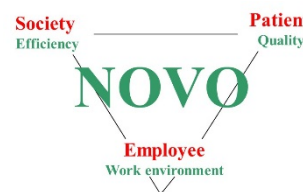
ISBN 978-952-343-194-2 (printed)  
ISBN 978-952-343-195-9 (online publication)  
ISSN 2323-363X (online publication)

<http://urn.fi/URN:ISBN:978-952-343-195-9>

Juvenes Print – Finnish University Print Ltd  
Helsinki, Finland 2018



# Preface



On behalf of Steering group and Organising Committee, it is our great pleasure to welcome you to the 12th NOVO-Symposium: **Care integration, systems reform and sustainability in health care.**

This is the third time the NOVO Symposium has been hosted in Helsinki and this time at the venue of National Institute for Health and Welfare (THL) Helsinki. Symposium is a joint effort of the Finnish Institution of Occupational Health (FIOH) and THL.

Health care services all over Europe struggle with economic constraints, aging population and increasing demands for services. Patient choice and marketization of service production in health care has increased in Europe as well as Nordic countries as means for higher efficiency. Another major development has been care integration and care coordination for clients with multiple diseases or needs. In most of the Nordic countries employees' sickleaves and turnover are increasing and shortage of personnel is frequent. Implementation of large reforms demands for sustainability in terms of society, patient and employees.

For this symposium, we have abstracts covering widely the topics of the NOVO: work environment, efficiency and quality of care. Moreover abstracts represent a board range of methodological perspective. We have organized the presentations under eight tracks:

- Reforms
- Care organisation development
- Activities and processes
- Integration & efficiency
- Working life and stress
- Working environment and outcomes
- Management and leadership
- Quality & skills

As always, NOVO Symposium brings together researchers to discuss Nordic insights into health care systems. We hope that the current NOVO Symposium will offer inspiring views for international research and will generate stimulating exchanges of experiences about the aspects of support sustainable health care systems.

We encourage you to networking and hope you a pleasant symposium in Helsinki!

Timo Sinervo & Marjukka Laine



# NOVO Steering group

Denmark: Kasper Edwards, chair

Peter Hasle and Thim Prætorius

Finland: Timo Sinervo and Marjukka Laine

Iceland: Sigrún Gunnarsdóttir and Helga Bragadóttir

Norway: Beate André and Arne Orvik

Sweden: Andrea Eriksson

# Keynote speaker Markku Pekurinen



Professor **Markku Pekurinen** is director of Department of Health and Social Care Systems in National Institute for Health and Welfare (THL). He has studied especially health and social care systems, purchasing, funding as well as efficiency and cost-efficiency of service production. Pekurinen is economist and done his PhD in health economics in the famous university of York in England. He is also an adjunct professor in the universities of Tampere and Eastern Finland. Pekurinen has participated to several health and social care reforms and evaluations in Finland and abroad. Pekurinen is one of the key figures in the present health and social care reform in Finland.

# Keynote speaker Paula Salo



**Paula Salo** is Ph.D. and Professor in psychology in the University of Turku and working also as specialist researcher at the Finnish Institute of Occupational Health. Her research areas are social epidemiology and sleep research, particularly work-related psychosocial factors as well as sleep disorders and work disability. She has participated in execution of the Finnish Public Sector study since 2008: Ten Town study and Hospital Personnel study.



## Contents

Keynote speaker Markku Pekurinen .....	6
Keynote speaker Paula Salo .....	7
Program: The 12th NOVO symposium.....	11
Session 1: Reforms.....	14
From activity-based costing to Value-based care in Danish healthcare.....	14
Professionals' perspectives on consequences of a care choice reform – a qualitative case study .....	15
Perceptions of the Finnish employees about working in the changing health and social care system.....	16
Session 2: Care organisation development.....	17
Disruptive technology meets sustainable professional positions .....	17
Introducing self-organization to Finnish home care for the elderly.....	18
The Introduction and Assessment of Good Telerehabilitation Practices in Countryside – Aspects on Calculation of Costs.....	19
Session 3: Activities and processes .....	20
Value Stream Mapping in healthcare: ergonomic implications and the significance of adding an ergonomic module - The NOVO Multicentre Study I .....	20
Healthcare systems reform through activity focus.....	22
Systematic Mapping of Care Ward Activities – Towards a Standardized Activity Structure and Terminology of Hospital Activities .....	23
Sustainable change in healthcare: A cascading implementation model.....	24
Session 4: Integration & efficiency .....	25
Distributed leadership in integrated health care: A literature review.....	25
My Kanta Pages patient portal service implementation and use in 2010–2017.....	27
Performance comparison of hip fracture pathways in two capital cities: Does the level of integration matter? .....	28
Knowledge sharing through intentionally encouraged Communities of Practice .....	29
Session 5: Working life and stress .....	30
Health a decade after career start: Long-term effects of repeated exposure to stressors .....	30
Longitudinal study of nurses' quick returns and self rated stress when entering working life .....	31
The organizational socialization of new human service professionals in Sweden: An intensive longitudinal study .....	33
Session 6: Working environment and outcomes .....	34
Does organization matter? A survey and register study of the impact of hospital organization on quality, well-being and effectiveness.....	34
Factors associated with employment barriers faced by foreign-born physicians in Finland .....	35
Work demands and organizational resources impacting assistant and registered nurses' intention to leave.....	36
Session 7: Management and leadership.....	37
“Most importantly, one has to take care of oneself” Nurse manager experience of stress and challenges and their coping mechanisms in this regard.....	37
Age Management Practices Promoting (Ageing) Employees' Working Career in the Health Care Sector – A Case Study from Germany, Finland and the UK .....	38
Potentials of servant leadership in welfare service .....	39
Sustainable management and leadership in health care organizations through organizational health.....	40
Session 8: Quality & skills .....	42
Embedding evidence-based practice among nursing undergraduates. Results from a pilot study.....	42
Monitoring the care of a diabetic for effective policy in lifestyle guidance .....	43
The relationship between participative safety in teams and quality of care.....	44

# Program: The 12th NOVO symposium

## Care integration, systems reform and sustainability in health care

Venue: National institute for health and welfare (THL) Mannerheimintie 166, Salit 2-3 (Auditorium).

Transportation: Tram no 10 from the city centre and buses.

### Thursday 15 November 2018

- 9.00 Registration and coffee
- 10.00 **Opening the Symposium**
- 10.15 Keynote: Professor **Markku Pekurinen**.  
*Health and social care reform in Finland, expert view and political reality*
- 11.00 Session 1: **Reforms**
- Edwards et al.: From activity-based costing to Value-based care in Danish healthcare
  - Korlén et al.: Professionals' perspectives on consequences of a care choice reform – a qualitative case study
  - Kaihlanen et al.: Perceptions of the Finnish employees about working in the changing health and social care system
- 11.45 **Lunch**
- 12.45 Session 2: **Care organisation development**
- Forss et al.: Disruptive technology meets sustainable professional positions
  - Jantunen et al.: Introducing self-organization to Finnish home care for the elderly
  - Kekkonen et al.: The Introduction and Assessment of Good Telerehabilitation Practices in Countryside – Aspects on Calculation of Costs
- 13.30 **Coffee**
- 14.00 Session 3: **Activities and processes**
- Winkel et al.: Value Stream Mapping in healthcare: ergonomic implications and the significance of adding an ergonomic module
  - Almström et al.: Healthcare systems reform through activity focus
  - Hermansson et al.: Systematic Mapping of Care Ward Activities – Towards a Standardized Activity Structure and Terminology of Hospital Activities
  - Edwards et al.: Sustainable change in healthcare: A cascading implementation model

- 15.00    **Session 4: Integration & efficiency**
- Braut et al.: Distributed leadership in integrated health care: A literature review
  - Jormanainen et al.: My Kanta Pages patient portal service implementation and use in 2010–2017
  - Häkkinen et al.: Performance comparison of hip fracture pathways in two capital cities: Does the level of integration matter?
  - Jørgensen et al.: Knowledge sharing through intentionally encouraged Communities of Practice
- 16.00    **Closing the day**
- 16.15    Steering group meeting
- 18.00    Guided tours at museum Amos Rex, Street address Mannerheimintie 22-24
- 19.00    Dinner at the Restaurant Lasipalatsi, Street address Mannerheimintie 22-24

## Friday 16 November 2018

- Keynote: Professor **Paula Salo**.
- 9.15    *Well-being at work in changing health care and social services. Results from the Finnish Public Sector study.*
- 10.00    **Session 5: Working life and stress**
- Rudman et al.: Health a decade after career start: Long-term effects of repeated exposure to stressors
  - Dahlgren et al.: Longitudinal study of nurses' quick returns and self rated stress when entering working life
  - Gustavsson et al.: The organizational socialization of new human service professionals in Sweden: An intensive longitudinal study
- 10.45    **Coffee**
- 11.15    **Session 6: Working environment and outcomes**
- Praetorius et al.: Does organization matter? A survey and register study of the impact of hospital organization on quality, well-being and effectiveness
  - Lehtoaro et al.: Factors associated with employment barriers faced by foreign-born physicians in Finland
  - Eriksson et al.: Work demands and organizational resources impacting assistant and registered nurses' intention to leave
- 12.00    **Lunch**

13.00 Session 7: **Management and leadership**

- Aðalbjörg et al.: “Most importantly, one has to take care of oneself” Nurse manager experience of stress and challenges and their coping mechanisms in this regard
- Ruokolainen et al.: Age Management Practices Promoting (Ageing) Employees’ Working Career in the Health Care Sector – A Case Study from Germany, Finland and the UK
- Gunnarsdóttir et al.: Potentials of servant leadership in welfare service
- Orvik et al.: Sustainable management and leadership in health care organizations through organizational health

14.00 **Coffee**

14.30 Session 8: **Quality & skills**

- André et al.: Embedding evidence-based practice among nursing undergraduates. Results from a pilot study
- Dalbom et al.: Monitoring the care of a diabetic for effective policy in lifestyle guidance
- Hietapakka et al.: The relationship between participative safety in teams and quality of care

15.15 **Closing**

16.00 **End**

# Session 1: Reforms

## From activity-based costing to Value-based care in Danish healthcare

\*Kasper Edwards<sup>1</sup>, Henrik Nissen Breddam<sup>1</sup>, Charlotte Vilhelmsen<sup>1</sup>

<sup>1</sup>Technical University of Denmark, Dept. Management Engineering, Denmark;

\*Corresponding author

### Background

The Danish healthcare system has, as others, been subject of discussions of how it should be managed and rewarded (payment) to be most beneficial for society. Naturally this has been subject to the dominating political winds. Hospitals are run by the Regions. From 2002 to today the hospitals have been controlled using a base budget and activity-based costing, also known as the DRG-system). The DRG-system ensures that a ward receives a payment for each activity performed e.g. consultation, surgery etc. The DRG-system does not account for all payments and wards also receive a base pay. The DRG-system has been highly successful in increasing number of treated patients and consequently reducing waiting lists. However, the DRG-system is criticised for generating too much activity and incentivising treating of patients beyond need.

The Capital Region has initiated 7 test projects with the purpose of developing, implementing and evaluating value-based care as alternative to the DRG-system.

### Material and Methods

Project descriptions from 7 Danish test cases in the Capital Region was collected. The project descriptions were analysed. The analysis focused on incentives, cost-consequences and changes compared to current state.

### Conclusions

We present key changes in costing and payment to the departments in the 7 projects. The projects share features and structure but appear to borrow KPI's and logic from the existing activity-based costing system. There appear to be a need for developing measures that can capture patient related outcomes and provide useful incentives for hospitals and staff. The current activity-based-costing favours generating activity while indirectly punishing more efficient treatment regimens with less activity. "You get what you measure" and there is a need to understand how value-based care affect behaviour.



## **Professionals' perspectives on consequences of a care choice reform – a qualitative case study**

Sara Korlén, PhDc; Isis Amer-Wählin, PhD; Peter Lindgren, PhD; Ulrica von Thiele Schwarz, PhD.

Affiliation: All authors active at Medical Management Centre, Department of LIME, Karolinska Institutet.

### **Introduction**

The application of market-inspired policy has increased in health care, for example by increasing patients' choice and financial incentives to health care providers. Such reforms are expected to increase economic efficiency and quality of care, but evaluations show mixed and partially contradictory results. Case studies have identified the risk of unintended consequences for patients and professionals. More knowledge is needed about the consequences of such reforms at both macro, meso and micro level of health care systems.

### **Aim**

The aim of the study was to explore the consequences that professionals identified as relevant, and why, following the introduction of care choice in specialized orthopedics in a Stockholm County Council in Sweden.

### **Methods**

The study is a qualitative case study based on interviews with 19 informants, including both specialized (private) healthcare providers and hospitals (public and private). All informants were clinicians with experience and detailed insights in the care flow included in the care choice model.

### **Results**

The results show that the professionals analyzed the consequences of the care choices reform from several perspectives, including the organization of care, the patient, the work environment, and education and research. In parallel, the informants took both a local provider and a system perspective and identified consequences both in the short and long term.

### **Conclusions**

Professionals, who work close to patients, are a valuable source of knowledge when evaluating policy reforms. Their analyses can contribute by covering both a local and a system perspective, serving as a guiding light to consequences which traditional evaluations might overlook. The results of this study were relatively coherent independent of provider type, however, the generalization of our findings can be limited to other care choice models and types of care flows.

## **Perceptions of the Finnish employees about working in the changing health and social care system**

Kaihlanen Anu, National institute for health and welfare

Laulainen Sanna, University of Eastern Finland

Niiranen Vuokko, University of Eastern Finland

Keskimäki Ilmo, University of Tampere, National institute for health and welfare

Hietapakka Laura, National institute for health and welfare

Sinervo Timo, National institute for health and welfare.

### **Introduction**

Finnish health and social care system is currently under reform preparation. Integration of health and social care services is one of its main tasks, which requires new ways of acting, competent and committed workforce and proficient interprofessional cooperation. Another aim in the reform is to use market mechanism and patient choice as a tool to improve quality and efficiency. Major organisational changes are known to influence the employees in many ways; however, we aimed to examine how the current changes are perceived among the social and health care professionals.

### **Methods**

Study was conducted in two Finnish social- and health care organizations where the service integration and new operating models have already been implemented. Semi-structured single (n=6) and group interviews (n=12) were conducted with nurses, physiotherapists, physicians and social workers (n=47) from 16 work units. Data was analysed with inductive content analysis by using Atlas.ti program.

### **Results**

Working under continuous new instructions and implementing new ways of acting caused stress, especially when workloads were already high. Possibilities to influence or discuss about the changes with colleagues or managers were seen low, due to declaratory nature of the received information and instructions. Managers work were seen to move further from staff, but they were expected to be easily reachable in daily work, be aware of situations in the field and know the work of different professionals in the unit. Competence requirements were described broader than before and special knowledge and skills less appreciated. Increased cooperation and uniform practices were seen positive but challenged because of the unfamiliarity of new coworkers and work of other professions.

### **Conclusions**

Developing care integration is challenging during a large organisational reform as managers and networks are changing and workloads are already high. Continuous changes can be stressful if information is delivered top-down without proper discussion and if possibilities to influence are weak. Promoting employees' commitment and motivation to change is important in order to provide more effective and client-centered health and social care services. Sufficient resources to implement the changes, facilitating interprofessional teamwork as well as acknowledgement of individual knowledge, skills and wellbeing should be considered.

## Session 2: Care organisation development

### Disruptive technology meets sustainable professional positions

Forss, Maria , Bjørkquist , Catharina & Samuelsen, Finn

An overall expectation is that new technology will be one major factor for tackling and meeting the rising costs and challenges of the future elderly care. And technological disruption has the potential of creating a paradigm shift, but only if the employees' identify, accept and act upon this opportunity. Paradigm shifts and real changes only happens when employees change their way of working. In this paper, we are showing through a case study how strong professional positions effectively preserve existing structures and resists new solutions. This study follows implementation of digital safety alarms for elderly in a municipality, where digital ones are replacing old analogue alarms. Leaders (n=12) and employees (n=22) from different healthcare settings, such as physiotherapist, homecare personnel and nurses assisting GP were interviewed about the changes the new alarm created and made, possible. With our result we show that all elements for a potential disrupted technology were in place, still, small actual changes were made to the daily routines. Hence we argue that this lack of innovation was due to employees viewing themselves as passive participations in the technological changes made. Whereas they at the same time present themselves as active guardians of their own professional position. Hence, we discuss that the professional positions and the scope of change are element by which digital changes can be understood. Successful innovative solutions and implemented new working models are highly dependent upon professional positioning and especially any change in this position. This is what we call disruptive technology meets professional sustainability.

## Introducing self-organization to Finnish home care for the elderly

Sami Jantunen, Lappeenranta University of Technology, sami.jantunen[at]lut.fi  
 Jukka Piippo, Arcada University of Applied Sciences, jukka.piippo[at]arcada.fi  
 Jukka Surakka, Arcada University of Applied Sciences, jukka.surakka[at]arcada.fi  
 Ira Jeglinsky-Kankainen, Arcada University of Applied Sciences,  
 ira.jeglinsky-kankainen[at]arcada.fi  
 Åsa Rosengren, Arcada University of Applied Sciences, asa.rosengren[at]arcada.fi  
 Timo Sinervo, Finnish National Institute for Health and Welfare, timo.sinervo[at]thl.fi  
 Thommie Buström, Hanken School of Economics, thommie.burstrom[at]hanken.fi

Home care services for the elderly has tumbled into chaos in many Finnish cities and municipalities. Caregivers have become overloaded with work. Consequently, the pace of work has become to be best described as chronic rush. Caregivers are more and more on sick leave and it is hard to get substitutes or new employees for the job. Caregivers are tired and sad, because they can no longer offer their services with the quality they would prefer. Clients are also dissatisfied, because they are confronted with many different caregivers, who are always in a hurry.

When home care services for the elderly is suffering from overload of work and lack of resources (a problem that is intensified by increasing sick leaves), it becomes clear that the issue will not be resolved by the same organizational logic that has created the problem in the first place. Hence, we need to seek for new perspectives in order to be able to cope better with the situation.

The Dutch home-care provider Buurtzorg Nederland has attracted widespread interest for its innovative use of self-organizing teams of home caregivers. By trusting the caregivers and empowering them to be responsible for their own work processes and the organization of their work, Buurtzorg has achieved positive results in terms of effectiveness and the satisfaction of clients and caregivers.

The success of Buurtzorg shows that self-organization could also be an effective way of alleviating severe problems of Finnish home care services. To this end, Arcada University of Applied Sciences, Lappeenranta University of Technology, Finnish National Institute for Health and Welfare, and Hanken School of Economics started at the beginning of 2018 a new research project, with the intention to understand better how self-organization could be introduced to Finnish home care organizations and what are the outcomes of self organization in terms of 1) work effectiveness, 2) employee satisfaction, and 3) customer satisfaction.

In this oral presentation, we shall present early results of conducted interviews, work satisfaction survey and the interventions done in home care organizations.

## **The Introduction and Assessment of Good Telerehabilitation Practices in Countryside – Aspects on Calculation of Costs**

Päivi Kekkonen & Arto Reiman

University of Oulu, Industrial Engineering and Management, P.O. Box 4610, FI-90014

University of Oulu, Oulu, Finland. Email: paivi.kekkonen[at]oulu.fi.

### **Introduction**

The rehabilitation services in Finland are going through a change due to aging population, the current economic situation and the social and healthcare reform. Digitalization on the other hand enables new ways of producing services.

Sparsely populated areas and long distances are typical for the countryside of northern Finland, which is the target area of this study. Telerehabilitation offers a way to provide rehabilitation services in cases where the patient has a long distance to reach the face-to-face services or has physical or social limitations related to mobility. Bringing the rehabilitation services to the patient's home through telerehabilitation could be an answer to the demands of providing equal opportunities for the inhabitants of sparsely populated areas to access the necessary rehabilitation services.

### **Aim**

The aim of this study is to find out what kind of benefits telerehabilitation can provide for an individual taking part in the rehabilitation, the rehabilitation service provider and the municipalities responsible for offering rehabilitation services. The possible cost saving potential of telerehabilitation as compared to traditional rehabilitation methods in terms of these different actors is the main point of interest. The changes in the work of rehabilitation professionals due to digitalization of services are also taken into account.

### **Material and methods**

The material of the study consists of user-based data gathered from several actors, including the experiences from the patients and professionals as well as information on costs from the rehabilitation service provider. The target groups of the study include elderly and young people living in the countryside, who take part in either individual or group rehabilitation.

### **Results**

As a result of this study we aim to have estimations on the cost saving potential of telerehabilitation to support the decision making of both the municipalities and the rehabilitation service providers in terms of introducing telerehabilitation services.

### **Conclusions**

Based on the results of this study it will be possible to make well-grounded decisions on introducing telerehabilitation services that take into account the special needs and characteristics of rural areas.



# Session 3: Activities and processes

## Value Stream Mapping in healthcare: ergonomic implications and the significance of adding an ergonomic module - The NOVO Multicentre Study I

\*Jörgen Winkel<sup>1,2</sup>, Kasper Edwards<sup>2</sup>, Caroline Jarebrant<sup>3</sup>, Birna Dröfn Birgisdóttir<sup>4</sup>, Jan Johansson Hanse<sup>5</sup>, Ulrika Harlin<sup>3</sup>, Kerstin Ulin<sup>6</sup>, Sigrún Gunnarsdóttir<sup>7</sup>

<sup>1</sup>University of Gothenburg, Dept. Sociology and Work Science, Box 705, SE-405 30 Gothenburg, Sweden;

<sup>2</sup>Technical University of Denmark, Dept. Management Engineering, Denmark;

<sup>3</sup>Swerea IVF, Sweden;

<sup>4</sup>University of Iceland and Bifröst University, School of Business, Iceland;

<sup>5</sup>Dept. Psychology, University of Gothenburg, Sweden;

<sup>6</sup>Sahlgrenska University Hospital & Sahlgrenska Academy, Dept. Health and Care Science, Sweden;

<sup>7</sup>Reykjavik University, School of Business, Iceland;

\*Corresponding author

### Background

During the recent decade “Lean production” has become a prevalent rationalization methodology in healthcare. A commonly applied Lean tool is Value Stream Mapping (VSM). It is a participatory tool, i.e. used to identify non-Value-Adding-Work (non-VAW) in patient flows. The process results in an Action Plan suggesting interventions aiming at minimizing non-VAW in order to increase the proportion of value creation. Scientific evidence indicates that non-VAW often represents periods of physical and mental recovery. Reduction of non-VAW may therefore cause “Work intensification”. On this background the VSM tool has been complemented by an ergonomic module (ErgoVSM) to be used in the healthcare sector (Jarebrant et al., 2010). The aim of the present study was to investigate differences in Action Plans regarding expected impact on ergonomics and performance issues when using ErgoVSM rather than VSM.

### Material and Methods

Fourteen hospital wards were investigated, six in Denmark, two in Iceland and six in Sweden (one VSM ward refused to complete). In each country half the wards used VSM according to their ordinary Lean routines and the other half used ErgoVSM. All action plans were collected and each proposal was analysed based on triangulations between different stakeholder assessments. Data were analysed using Fisher's exact test of contingency tables of impact on four factors: Work Environment (WE, +/-), task/job content/system and efficiency according to VSM/ErgoVSM.

## Results

Of a total of 175 proposals from all the investigated wards 106 were assessed as causing WE+, 8 WE-, 20 WE0, and 41 Not Assessable. Of the 106 WE+ proposals 78% aimed at system level changes (job content and work situation), the remaining at task level changes or not assessable. This is in contrast to the intervention proposals generally investigated in the ergonomic intervention literature focusing almost exclusively interventions at task and individual level. Using ErgoVSM rather than VSM in Sweden and Iceland resulted in a higher proportion of proposals aiming at reduction of ergonomic risks compared to the Danish wards ( $p=0.02$ ). Using ErgoVSM did not result in fewer proposals aiming at improving efficiency ( $p=0.5$ ).

## Conclusions

Integration of ergonomic criteria into the rationalization tool VSM seems to imply a potential for more comprehensive ergonomic improvements without inhibiting the development of proposals improving efficiency. However, this impact of ErgoVSM seems to be modified by contextual factors.

## **Healthcare systems reform through activity focus**

Peter Almström

Department of Technology Management and Economics  
Chalmers University of Technology  
Gothenburg, Sweden

### **Introduction**

Healthcare systems and particularly the large hospitals need reformation, but there is obviously a lack of good ideas. The professions, the unions as well as the politicians seems to believe that the only solution is to employ more staff. We have seen the effect of that solution: the capacity has increased a little while the cost has increased a lot, i.e. productivity has decreased.

The management philosophies borrowed from other fields have largely failed to deliver the promised improvements. One important reason for this, which hasn't been highlighted in the science literature, is that the fundamental building blocks for designing and improving the systems are not in place. These building blocks are the activities performed by people at the floor level.

### **Aim**

The aim of this presentation is to conceptually explain the fundamental prerequisites to achieve a reform of the operations at large hospitals by focusing on activities, especially those activities that doesn't involve patients.

### **Material and methods**

The conceptual conclusions in this presentation are based on several empirical studies at large hospitals in Sweden using work study and design science methods. The basic concepts are taken from operation management theory developed in other areas of business.

### **Results**

Results from several studies are presented in brief, both to illustrate the improvements potentials and to illustrate promising solutions.

### **Conclusions**

To focus on activities, which they are and how they are performed, is central for any operational improvement. It has been found that it is essential to differentiate between different types of activities and the most important distinction is to separate "handicraft activities" from "series production activities".

## **Systematic Mapping of Care Ward Activities – Towards a Standardized Activity Structure and Terminology of Hospital Activities**

Simon Hermansson, Development manager at Sahlgrenska University Hospital and PhD student at Department of Technology Management and Economics, Chalmers University of Technology

Peter Almström, Associate Professor, Department of Technology Management and Economics, Chalmers University of Technology

### **Introduction**

The productivity needs to increase in public healthcare in Sweden, but it is actually decreasing. Previous research has pointed at great productivity increase potentials when specific activities are analysed using work study techniques. The same activities are performed at several places at a hospital. However, many activities are not performed in a standardized way. There is great potential to improve productivity by standardizing repetitive supporting activities. However, the most fundamental factor is missing: There is no standardized terminology for what to call all activities. For many direct patient activities, e.g. different treatments, there are official standards but for supporting activities, which constitute a large majority of the total work time, there are no standards.

### **Aim**

The aim of the research is to develop a generalized structure and terminology for all hospital activities and develop a practical method for collecting activity data from all organizational units. In the first phase, the scope has been delimited to care ward activities.

### **Material and methods**

The researchers have lead the design process in an R&D project at Sahlgrenska University Hospital, using a Design Science Research approach. The project has resulted in an activity structure, a terminology, and a method for data collection. The project was carried out through 22 workshops, by a multi-functional project team and involving nine different care wards representing different disciplines for validation.

### **Results**

Based on pre-determined time system logic a hierarchical activity structure was developed consisting of six levels: Activity category, Activity, Activity variant, Building block, Sequence, and Element. The first three levels are specific and discrete and group and organize activities. The last three levels are generic, and in combination describe in increasing detail how to perform the specific activities.

### **Contributions**

The primary contribution of this research is to hospital operations management through the generalized structure and the method for use at other hospitals. It also contributes to hospital operations since it is necessary to effectively improve standardized activities throughout a whole hospital. An activity structure is the first step towards increased productivity in healthcare. The next step involves improvements and standardization of how activities are carried out.

## Sustainable change in healthcare: A cascading implementation model

\*Kasper Edwards<sup>1</sup>, Thim Prætorius<sup>2</sup>, Anders Paarup Nielsen<sup>2</sup>

<sup>1</sup> Technical University of Denmark, Dept. Management Engineering;

<sup>2</sup> Aalborg University, Denmark, Dept. Behavioural Operations and Innovation Management

\*Corresponding author

### Background

In 2013-2015 the heart centre at Rigshospitalet in Denmark went through a successful change process. Motivated by poor wellbeing at work survey results and management's belief that productivity could be improved a change project was launched. Management had requested that the project should be based on the principles of relational coordination and lean management to ensure that both wellbeing at work and productivity was addressed.

The project was organised in three phases resembling diagnostics, development of interventions and implementation. Before and after implementation relational coordination and challenges related to the day-to-day operations in the heart centre was measured using a questionnaire. The challenges was formulated by the employees.

The follow-up measurement showed that both relational coordination and challenges had been significantly improved and the project labelled a success.

The purpose of this abstract is to analyse the project and develop theory and principles to explain the success so it may be replicated elsewhere.

### Material and Methods

This is an action research project where Kasper Edwards participated as consultant. Group interviews were recorded and minutes from meetings as well as outcomes from workshops were collected. Three post project interviews were done with managers.

### Results

We find that the project followed a transparent cascading structure where employees formulated problems and developed solutions. Management was not part of the process and only initiated the project stating the direction and desired outcome. This allowed employees to freely identify problems in their day to day work and propose solutions.

Before developing solutions employees filled out a little black-book with notes describing challenges in their work. This was transcribed and emailed to all ensuring full transparency. Three workshops with a full surgical team were held to develop solutions to the described problems. The workshops used the A3 lean method which again ensured transparency. A3 problem solving gathers problem, cause, solution and implementation plan in one piece of paper. These were then handed to all employees for comments. After all a series of meetings where employees commented and proposed improvements the changes were decided and implemented. 32 proposals were decided and all were implemented with success.



# Session 4: Intergation & efficiency

## Distributed leadership in integrated health care: A literature review

Authors: Harald Braut, Aslaug Mikkelsen

Affiliations:

Harald Braut, PhD Candidate, UiS Business School, University of Stavanger

Aslaug Mikkelsen, Professor of Management, UiS Business School, University of Stavanger

### Introduction

Since integrated patient-centred health care has proved difficult to realize in practice, distributed leadership (DL) has been introduced as a solution.

### Aim

The primary research question of this review is to investigate how DL works and not works in integrated health care programs.

### Material and methods

Literature searches including “integrated care”, “distributed leadership” and related search words in relevant electronic databases. Literature published in journals (2012-2018) were included for this abstract (N=10).

### Results

Review of literature identified three commonly discussed topics on DL and integrated care: how to establish a shared vision, integration methods and aspects on integrated care program development.

Shared vision: leaders at all levels are responsible for developing a collaborative culture and shared vision. In practice, literature challenges leaders to identify and reinforce values of relevance and ensure strong and evolving clarity about why (and not necessarily who and how).

Relevance of method of integration: Literature favors physical contacts and meetings, co-location and one-point access, which requires DL to be established. This finding is supported by literature that recommend further integration at the organizational level – “contact is not enough”.

Leadership processes in integrated care program development: To develop systems for dialogue and communication with all stakeholders to help “buy-in”, formal leaders are credible in terms of their knowledge in more than one subject (e.g. both health and social care). Executive meetings at regular intervals are considered central to collaboration, and all sectors, professions and patients should be present in meetings. Team-work is suggested as the preferred way to develop shared vision, breaking down silos and sharing skills and knowledge. When involving patients and dependents it is suggested that meetings are held on “neutral ground”, and not in hospitals or governmental locations. Rapid service integration should be avoided, and trial and failure accepted.

## **Conclusion**

To succeed in integrated health care programs leadership should be distributed across sectors and professions to secure the right level of integration. The knowledge management activity of formal leaders should enable stakeholders to practice distributed leadership. The findings are useful for future research and practice in integrated health care.

## My Kanta Pages patient portal service implementation and use in 2010–2017

Jormanainen, Vesa, MD, MSc, Specialist in Public Health  
Health and Social Systems Research, National Institute for Health and Welfare (THL),  
Helsinki, Finland

### Introduction

Electronic health (eHealth), including electronic health records, electronic identification, online portals, and mobile health applications has rapidly become common not only among health care providers but also patients and customers. The implementation of these systems has led to notable changes for health and social care personnel, including pharmacists. Sweden, Norway, Denmark, Estonia and Finland (My Kanta Pages) have national online services for citizens to view their own personal health data, including ePrescriptions.

### Aim

In Finland, the national data system service for health care, pharmacies, and citizens called the Kanta Services includes ePrescriptions, a Pharmaceutical Database, My Kanta Pages website, and a Patient Data Repository. The study objective was to investigate national My Kanta Pages patient portal service implementation, use and users in 2010–2017 in Finland.

### Material and methods

Our data were collected monthly during My Kanta Pages implementation and use in 2010 till end of 2017. Results are shown in counts (n) or proportions (%) in tables and figures.

### Results

Since the service launch in 20 May 2010, a total of 2.37 million persons had used the service by 31.12.2017. There were 1.88 million users in 2017, and the proportion of users was 42.3%, highest (47.3%) in Northern Ostrobothnia and lowest in Åland Islands (14.6%). By 31.12.2017, the service had 16.45 million visitors, who opened the entry page 32.45 million times and sent 3.96 million prescription renewal requests to health care. Caregivers of a child under 10-year-old had used their limited access to see and act on behalf of the child 1.06 million registered events. All pharmacies and public health care providers send electronic, encrypted, standardized data to Kanta Services. In addition, 1268 private health care organisations send prescription and 323 organisations send EHR data to Kanta Services. Before the service implementation, every ePrescription or Patient Data Repository data system had to pass a certification process. Data security and safety issues were included in both service implementation processes.

### Conclusions

Since 7.5 years after the launch, national My Kanta Pages service is in active use among patients, pharmacies, public and private health care providers in Finland.

## Performance comparison of hip fracture pathways in two capital cities: Does the level of integration matter?

Unto Häkkinen<sup>1</sup>, Terje P. Hagen<sup>2</sup> and Tron Anders Moger<sup>2</sup>

<sup>1</sup> National Institute for Health and Welfare (THL), Helsinki, Finland

<sup>2</sup> Department of Health Management and Health Economics, University of Oslo, Norway

### Background

Finland and Norway have health care systems with a varying degree of vertical integration. In Finland the financial responsibility for all patient treatment is placed at the municipal level, while in Norway the responsibility for patients is divided between the municipalities (primary and long-term care) and state-owned hospitals. From 2012, the Norwegian system became more vertically integrated.

### Aims

The main aim of the study was to evaluate whether different models of vertical integration affect the performance of the health care system and the outcome for hip fracture patients. Of specific interest have been the effects of the Coordination Reform implemented in Oslo.

### Material and methods

The data included operated hip fracture patients from the years 2009-2014. Data from routinely collected national registers (which also included primary health and long-term care services) were linked. Performance indicators were compared at baseline, and trends were described and analysed by difference-in-difference methods.

### Results

The baseline study (2009-2011) indicated that hip fracture patients in Oslo had longer stays in acute hospitals. They used less institutional care outside of the hospitals as well as more GP services and fewer other outpatient services. Mortality was lower, and the probability of being discharged to home after 90 days was higher than in Helsinki. The Coordination Reform shortened the length of the first acute stay in the hospitals, but it increased the length of the first institutional episode, demonstrating that the shorter hospital stays were more than compensated for by longer stays in long-term care institutions. The analyses of trends in short-term institutionalisation and patients discharged to home after 90 days also showed less desired results, which were partly explained by better trends in these indicators in the Helsinki area.

### Conclusion

After the reform, the performance differences between the two regions had decreased.

## Knowledge sharing through intentionally encouraged Communities of Practice

Rasmus Jørgensen, Ph.D. student, Kasper Edwards, Senior Researcher  
Implementation and performance management, DTU management, Kgs. Lyngby, Denmark

rajor[at]dtu.dk

A community of practice (CoP) is a group of people who share a common interest perhaps even passion for what they do e.g. work through voluntary participation. In the community of practice the people interact and develop their skills driven by their interest. The concept of CoP has been used to explain and describe learning and knowledge transfer e.g. in midwives. The concept is primarily descriptive but given that it is an effective learning method there is an increasing interest in using CoP's as a means to increase speed of learning and knowledge sharing in organizations.

Community of Practice is associated with knowledge sharing in healthcare, and researchers have proposed explanatory frameworks and guidelines for development. There is however a lack of empirical studies that can offer managers specific advice on how to intentionally encourage CoP.

In light of this, the study proposes and tests a framework for intentional development of CoP in healthcare operations. The proposed framework is structured in six steps that incorporate seven critical factors for CoP encouragement as identified in the literature.

A case study with two tests demonstrates the frameworks ability to encourage CoPs within operations, resulting in knowledge sharing between CoP participants and improvement of practice. In particular, the tests find that an introduction to the manager about CoP and resource allocation, choosing a practice with relevance for manager and employees, appointing a coordinator and inviting employees to participate voluntarily are particular important steps. The paper contributes to CoP theory, by providing specific guidance on intentional CoP encouragement, confirming findings of previous studies, as well as to managerial practice, by providing a tool that managers can apply to encourage CoPs within operations.

# Session 5: Working life and stress

## Health a decade after career start: Long-term effects of repeated exposure to stressors

Ann Rudman and Petter Gustavsson, Karolinska Institutet, Sweden

### Introduction

In order to ensure universal health utilization, human resources are needed in the form of healthcare professionals (GHW WHO, 2014). Problems with shortage of personnel in health care is affecting patients in several ways such as malpractice, shortage of hospital beds, missed follow-ups and long waiting times. But it also affects the personnel by increasing workload and stress leading to a poor work environment. In most countries, including Sweden, registered nurses and midwives represent the largest group of registered and regulated healthcare providers and are indispensable to the delivery of health care services to people of all ages. There is currently a worldwide shortage of nurses (Ball et al., 2018; WHO, 2003) that require not only attention but also systematic studies and action on how to create and ensure a supportive and healthy work environment where nurses thrive and recover (WHO, 2006). Currently, nurses are confronted with a demanding and complex work environment and risk to develop symptoms of stress and burnout early on in their career (Gustavsson. et al., 2015; Gustavsson et al., 2018). We have previously found that almost twenty percent of newly examined nurses showed high levels of burnout at some point during their first three years in the profession (Rudman & Gustavsson, 2011).

### Aim

The aim of this study was to investigate how early career burnout influence future career decisions, job attitudes and health.

### Material and methods

Data were taken from a prospective longitudinal study, named the Longitudinal Analysis of Nursing Education/Employment (the LANE study). The LANE study comprises three national cohorts of newly graduated Swedish nurses who were surveyed from last year in higher education into their first three years of working life.

### Results

Here results from a ten-year follow-up after their graduation from higher education, including almost 2500 respondents, will be presented.

### Conclusions

These results will contribute to knowledge on how to sustain and improve health and development, which in turn can guide change in education, health care policy, and clinical practice.

## Longitudinal study of nurses' quick returns and self rated stress when entering working life

Dahlgren A<sup>1</sup>, Tucker P<sup>2,3</sup>, Gustavsson P<sup>1</sup>, Rudman A<sup>1</sup>, Bujacz A<sup>1</sup>

<sup>1</sup>. The Division of Psychology, Department of Clinical Neuroscience, Karolinska Institute

<sup>2</sup>. Stress Research Institute, Stockholm University

<sup>3</sup>. Department of Psychology, Swansea University

### Introduction

Little is known about quick returns (QR) and stress. The aim of the current study was to use a longitudinal design to examine if the variation in QR, both within and between individuals, was associated with self rated stress.

### Participants and Methods

A questionnaire was sent weekly to 267 newly graduated nurses during the first 12 weeks of work (response rate 70-90%). Stress was measured with four items from the Stress-Energy-Questionnaire on a scale from 1 "not at all" to 6 "very much" (mean 3.64±0.8). Work hours the past week was reported and QRs were identified by evening-morning shift combinations. 262 persons were included in the analysis (2417 observations, average cluster size 9.22). We used a multilevel model with random slope of the effect within-person QR have on stress weekly. A sensitivity analysis was performed considering QR as dummy 0 vs 1-4 (65.8%) and 0-1 vs 2-4 (25.7%).

### Results

The results of the within-person analysis showed that one more QR in a week was associated with half a point increase on the stress scale compared to the stress level of the same person in a week with one fewer QR ( $r=.057$ ,  $p=.007$ ). The sensitivity analysis showed that, for both 0 versus 1-4 QRs and 0-1 versus 2-4 QRs, weeks with more QRs were associated with higher stress ratings. The confidence intervals in these two models overlapped (-0.004-0.073 and 0.022-0.177), indicating no absolute number where the increase in stress ratings happens; rather it seems to be a linear relationship. The between individuals analysis also showed a significant association indicating that individuals with more QRs over the period of 12 weeks had higher levels of self-rated stress in this period ( $r=.248$ ,  $p=.019$ ).

### Conclusion

An increase in QR was associated with elevated stress levels both within and between individuals. It was not possible to identify a threshold for when the increase started.

## References

- Ball, J. E., Bruyneel, L., Aiken, L. H., Sermeus, W., Sloane, D. M., Rafferty, A. M., . . . Consortium, R. N. C. (2018). Post-operative mortality, missed care and nurse staffing in nine countries: A cross-sectional study. *Int J Nurs Stud*, 78, 10-15. doi:10.1016/j.ijnurstu.2017.08.004
- GHWA WHO. (2014). A universal truth: no health without a workforce. (1.Health Manpower. 2.Health Personnel. 3.Delivery of Health Care. I.World Health Organization. II.Global Health Workforce Alliance). World Health Organisation, 104.
- Gustavsson, J. P., Frögeli, E., Dahlgren, A., Lövgren, M., & Rudman, A. (2015). New graduates exposure to high demands, low control and low support in their first three years in practice (Report B2015: 1)(in Swedish: Nya sjuksköterskors exponering för höga arbetskrav, låg kontroll och lågt stöd under sina första tre år i yrkeslivet (Rapport B2015: 1)). Retrieved from Stockholm:
- Gustavsson, P., Frögeli, E., Dahlgren, A., Sjöström-Bujacz, A., Aurell, J., Jenner, B., . . . Rudman, A. (2018). Psychosocial occupational health risks for nurses during the first five years of the profession: Longitudinal development and occurrence of repeated and prolonged exposure. Report B2018: 1 (in Swedish: Psykosociala arbetsmiljörisker för sjuksköterskor under de fem första åren i yrket: Longitudinell utveckling och förekomst av upprepade samt långvarig exponering. Rapport B2018:1). Stockholm: Karolinska Institutet, Department of Clinical Neuroscience
- Rudman, A., & Gustavsson, J. P. (2011). Early-career burnout among new graduate nurses: A prospective observational study of intra-individual change trajectories. *International Journal of Nursing Studies*, 48, 292-306. doi:S0020-7489(10)00240-3 [pii]10.1016/j.ijnurstu.2010.07.012
- WHO. (2003). World Health Report WHO 2003:110. Geneva, Switzerland: World Health Organization.
- WHO. (2006). Working together for health. The world Health Report 2006. Policy briefs. Geneva, Switzerland: World Health Organization.



## **The organizational socialization of new human service professionals in Sweden: An intensive longitudinal study**

Petter Gustavsson and Ann Rudman, Karolinska Institutet, Sweden

### **Introduction**

In order to optimize the performance of the healthcare workforce and to meet patient needs, positive working environments must be fostered and core skills and competencies must be strengthened (WHO, 2010, 2013). If these concerns are not dealt with appropriately this will have significant implications for the well-being of healthcare professionals as well as the accessibility and quality of healthcare for the public.

In order to stimulate work engagement, development and sustainability of professional teams, research into management and human resources stress the importance of quality strategies when it comes to recruiting and introducing new employees. However, the first months in a new occupation is often filled with uncertainty and stress, sometimes leading to early career turnover and or burnout. Moreover, the high work load and turnover rates in the health care system may result in that ambitious induction programs are cancelled and new employees have to take on the role of an experienced colleague very fast.

### **Aim**

The aim of this study is to investigate the current practices of onboarding of new human service professionals, and related these practices to proximal and distal outcomes.

### **Material and methods**

In an intensive longitudinal study, we have on a weekly basis followed 300 newly graduated human service professionals (mostly physicians, nurses and social workers) collecting data on introduction activities, support and learning climate during their first 3 months of practice.

### **Results**

Data will be presented describing the prevalence and timing of different organizational tactics used and how these influenced the development of new professionals' role clarity, competence and social integration. A qualitative analysis of crucial challenges for new human service professionals will also be presented.

### **Conclusions**

Results will be discussed in relation to previous findings using the framework of organizational socialization as well as in relation to current trends in the health care system.

### **References**

- WHO. (2010). Nursing and Midwifery Services. Strategic directions 2011–2015. World Health Organisation.
- WHO. (2013). WHO Nursing and Midwifery Progress Report 2008–2012. World Health Organisation, 145.

# Session 6: Working environment and outcomes

## Does organization matter? A survey and register study of the impact of hospital organization on quality, well-being and effectiveness

Thim Prætorius\*, Peter Hasle & Anders Paarup Nielsen  
Aalborg University Copenhagen

\*Corresponding author: Thim Prætorius (tpr[at]mp.aau.dk)

### Introduction

The need for collaborating efficiently across professional and organizational boundaries keep growing in order to attend to high patient complexity (e.g., multiple chronic diagnoses) and short length-of-stays. To achieve collaboration, a growing number of qualitative studies show that structures and processes (in short, organization) and management must be in place within hospitals. However, limited empirical knowledge exists about the quantitative effect on key hospital performance parameters. Thus, we aim to (1) identify how and to what extent hospital departments are organized and managed, thereby developing a typology of organizational forms and (2) analyze the effect organization and management (using the typology) on patient quality, employee well-being and hospital efficiency. Our working hypothesis is that more structured organizational forms have higher performance.

### Methods

We combine a self-developed survey with register data from hospitals. The survey draws on a literature review of organizational scales that we turned into a number of Likert scale questions (independent variables, e.g., use of meetings, plans and rules). We distribute the pilot-tested and email-based survey to managers of hospital units (e.g., wards). These respondents are uniquely positioned to shed light on how the unit is organized and managed at the front-line. We collect survey data twice because two data points allow us to perform a difference-in-difference analysis. That is, we can compare departments (organizational forms) that are similar at baseline (t0) and then over time (t1) measure the change in outcomes for units that have (not) changed form to determine performance effects (dependent variables such as patient satisfaction and sickness data). Control variables used include, e.g., management characteristics (e.g., style) and unit size (e.g., big vs. small) and type (e.g., surgery vs. medicine).

### Discussion

As the project is in its early phase, we will present our research design and considerations and allude to results based on the available literature from within and outside the health care domain. Besides developing a typology of organizational forms (hospital units) and determining effects, we expect our research to benefit practice by providing evidence-based knowledge about what organizational form to use where to benefit patients, employees, and the wider hospital system.

## Factors associated with employment barriers faced by foreign-born physicians in Finland

Lehtoaro, Salla<sup>1</sup>; Aalto, Anna-Mari<sup>1</sup>; Hietapakka, Laura<sup>1</sup>; Heponiemi, Tarja<sup>1</sup>

<sup>1</sup>National Institute for Health and Welfare, Helsinki Finland

### Introduction

International recruitment has been seen as a way to ease the lack of professionals in the Finnish health care sector. Previous studies suggest that migrant employees are at high risk for job instability, occupational segmentation, and discrimination in the recruitment process.

### Aim

As a part of Competent Workforce for the Future –project (Strategic Research Council, 303607) we examined what are the most important employment barriers that foreign-born physicians in Finland are facing and which factors are associated with these barriers.

### Material and methods

Data were gathered in 2017 with a questionnaire sent to foreign-born physicians who had a license to practice in Finland (371 respondents, aged between 26 and 65). Of the respondents, 65 % were females. Employment barriers were measured with mean of 10 items (e.g. lack of language skills, inadequate training, and own insecurity and fears), Cronbach's  $\alpha$  .75.

Analysis of covariance was used to examine the association of sex, age, years since graduating, years since obtaining a license to practice, work ability and overall satisfaction of life in Finland with employment barriers.

### Results

Own uncertainty and fears related to starting a job (46 %) and insufficient relationships with people of Finnish origin (39 %) were the most often mentioned employment barriers among the foreign-born physicians. Low work ability ( $F=4.7$ ,  $p<.001$ ), low overall satisfaction of life in Finland ( $F=4.5$ ,  $p<.001$ ) and fewer years since obtaining a license to practice ( $F=5.3$ ,  $p=.022$ ) were associated with higher levels of employment barriers.

### Conclusions

Health care organizations should find ways to support foreign-born physicians in their work in a new country. Moreover, it would be important to identify the factors that could increase the foreign-born physicians' work ability and promote their general satisfaction of life in Finland. Further, to lower the barriers of employment, support is needed for those physicians who have obtained their license to practice more recently.

## Work demands and organizational resources impacting assistant and registered nurses' intention to leave

Andrea Eriksson<sup>1</sup>, Göran Jutengren<sup>2</sup> & Lotta Dellve<sup>3</sup>

<sup>1</sup>School of Engineering Sciences in Chemistry, Biotechnology and Health, KTH Royal Institute of Technology, Sweden

<sup>2</sup>Department of Work Life and Social Welfare, University of Borås

<sup>3</sup>Department of Sociology and Work Science, Gothenburg University, Sweden

E-mail: andrea4[at]kth.se

### Introduction

Today, turnover among nurses is one of the largest challenges for health care service. Work demands have importance for turnover among both assistant and registered nurses. However, assistant and registered nurses often share work situations, but they have different work demands, work activities and differ in their professional or semi-professional roles. Also, their labor market conditions differ significantly. There is scarce research on what and how organizational demands impact assistant respectively registered nurses' intention to leave. The aim of this study was to investigate what demands were most important to predict intention to leave among assistant respectively registered nurses. The aim was furthermore to investigate organizational resources that might moderate the negative impact demands have on intention to leave.

### Method

A cohort (n= app. 400) with data from a survey to assistant and registered nurses collected in 2012, 2013 and 2014 (T1, T2 and T3) was analyzed. Multilinear analyses were performed to investigate what different demands and different organizational resources at T1 predicted intention to leave at T2 and T3. Secondly, interaction effects of combinations of resources and demands were analyzed for testing resources that might moderate the negative impact high demands have.

### Results

Work demands explained more of the variance in intention to leave among assistant nurses compared to registered nurses. Quantitative demands, emotional demands and role conflicts were significantly predicting assistant nurses' intention to leave. While, resources at work explained more of the variance in intention to leave among registered nurses compared to assistant nurses. Among the resources, sustainable work environment and recognition were significantly predicting registered nurses' intention to leave. None of the analyzed organizational resources had a major moderating effect on the negative impact from high demands on assistant nurses' intention to leave.

### Conclusion

It is important to decrease assistant nurses' demands at work for decreasing their intention to leave. More research is needed on specific resources that can moderate the negative impact high demands have on their intention to leave. Additional to organizational conditions, explanations may be found in the work-group climate as well as the labor market conditions and retirement benefit system.

# Session 7: Management and leadership

**“Most importantly, one has to take care of oneself”**

**Nurse manager experience of stress and challenges and their coping mechanisms in this regard.**

Aðalbjörg Stefania Helgadóttir, BSc, MSc student in health science. Nurse manager at The NLFI Spa and Medical Clinic.

Sigrún Gunnarsdóttir, PhD, associate professor, Faculty of Business, University of Iceland and Faculty of Business, Bifröst University.

## Introduction

Nurse managers in Iceland work in an environment characterized by high demands for quality and safety, together with nursing shortage and brain drain. Helpful coping strategies gain little attention and feasibility. Previous studies have pointed out insufficient support from nurse managers' superiors and lack of evidence-based knowledge regarding successful coping strategies. It is important to illuminate their experience because nurse managers are a significant link regarding quality and outcomes in health care organizations.

## Aim

The purpose of this phenomenological study was to gain knowledge of lived experience of nurse managers in Iceland regarding stress and challenges and their coping mechanisms in this regard.

## Material and methods

In this qualitative study, based on the Vancouver-school in phenomenology, in-depth interviews were conducted with sixteen nurse managers working in health care organizations in Iceland in the spring of 2018.

## Results

Four themes emerged: One never takes off this coat, points to their work, which they said were extensive with unlimited liability. You are not in charge even though you are, points to their work environment which they experienced as being in charge regarding their work, but not regarding influential decisions made by superiors. It is obvious when you feel good, points to wellbeing at work, which they either experienced as wellbeing and reconciliation or as exhausted and not reconciled. One has to be ready for anything, points to the coping mechanisms they used to tackle the work, in as self-care was vital and sums up the main finding of the study; Most importantly, one has to take care of oneself.

## Conclusion

The findings are consistent with former knowledge, but the study provides new knowledge about the importance of nurse managers' self-care to be able to handle demanding situations at work. The findings indicate that practicing helpful coping strategies, mainly taking care of oneself, makes it possible to gain reconciliation, success and wellbeing in a work that is demanding as well as nourishing.

## Age Management Practices Promoting (Ageing) Employees' Working Career in the Health Care Sector – A Case Study from Germany, Finland and the UK

Mervi Ruokolainen<sup>1</sup>, Sebastian Merkel<sup>2</sup> & Daniel Holman<sup>3</sup>

<sup>1</sup> Finnish Institute of Occupational Health

<sup>2</sup> Westphalian University of Applied Sciences

<sup>3</sup> The University of Sheffield

### Introduction

Many European health care organizations are currently facing a labor shortage, which increases pressure to promote ageing employees' working life participation. Previous studies have shown that some ageing employees are motivated to work longer, whereas others want to retire. The retirement thoughts and early retirement have been seen to be higher among employees with demanding working conditions and lower work ability (i.e., health, competence and motivation).

### Aim

This qualitative case study examines what kind of age management measures are applied in European health care organizations to support ageing employees' work ability and longer working careers.

### Material and methods

The study is based on 11 case studies conducted in health care organizations in Germany, Finland, and in the UK. Altogether 54 semi-structured interviews with employees and representatives of the management were executed. The interviews were analyzed using a qualitative content analysis.

### Results

Preliminary results showed that the many organizations did not have any specific age management strategies. The organizations aimed to maintain and promote employees' work ability mainly by reducing work demands and enhancing individual resources. HR measures such as time/shift arrangements, reduced hours, health promotion, training, and career development were implemented in many cases. The measures promoting intergenerational interaction, mutual learning and job/task modification were however rare. The organizations did not either apply a life-course perspective. Thus, different career and life transitions of employees were not actively considered nor measures that would empower and motivate the employees to enhance their own work ability. According to the interviewees, the implemented measures had rarely been evaluated afterwards although it was stated that the individually tailored measures had proved to be the most effective.

### Conclusion

Age management can offer many promising possibilities to enhance (ageing) employees' work ability and longer working careers. However, age management should be a part of organizations' HR strategies and the life-course perspective should be included in it.

## Potentials of servant leadership in welfare service

Sigrún Gunnarsdóttir, PhD, associate professor University of Iceland and Bifröst University  
Eydís Ósk Sigurðardóttir, RN, MSc, Health Care Institution of South Iceland.

Evidence is growing about the usefulness of servant leadership within healthcare services but there is still need to further knowledge in this area. Servant leadership is linked to organizational culture and is characterized by a balance between sincere interest in the needs of others, self awareness, foresight and shared accountability. Previous studies indicate positive links between servant leadership and wellbeing at work, good teamwork and quality of service. Majority of studies focus on servant leadership of next superior but limited studies are available focusing on servant leadership within the whole organization. Also, limited studies are available about servant leadership in social and home care. Therefore it was decided to conduct a study among staff members (N=283) of municipal welfare services (health care and home care). The instrument used was the OLA instrument with six subscales including questions about servant leadership at the organization as whole, i.e. as reflected in the organizational culture and in attitudes and behaviour among managers and staff. Findings show the level of servant leadership in the organization is 3.95 on the scale 1 – 5 with the highest score for subscale regarding respect and trust (4.10) and lowest for leadership and foresight (3.90). Difference between scores among staff and managers was not significant. Participants with short work experience scored higher than participants with longer experience and participants working shifts scored higher than individuals working day hours. Job satisfaction was significantly and positively linked to all servant leadership subscales which is in line with findings from previous studies. The findings provide new insight into servant leadership within social and home care services from the point of view of the organization as whole. The findings can benefit social and home care services to build sustainable working environment, promote job satisfaction and potentially to enbetter the quality of service provided.

## **Sustainable management and leadership in health care organizations through organizational health**

Arne Orvik, professor, Norwegian University of Science and Technology, Department of Health Sciences, Aalesund, Norway: arne.orvik[at]ntnu.no

Paul Crawford, professor, The University of Nottingham, Faculty of Health Sciences, UK, and Norwegian University of Science and Technology, Department of Health Sciences, Aalesund, Norway

### **Introduction**

The economic dimension of sustainability<sup>1</sup> can be promoted through organizational effectiveness, but the privileging of economic values may be transforming health care organizations into narrow or even inhuman economic enterprises. A concept of organizational health<sup>2,3</sup> which promotes health humanities<sup>4</sup> and the social dimension of sustainability<sup>1,5</sup> may challenge a purely economic focus and ensure health care organizations enrich rather than deplete human values and dignity.

### **Aim**

The aim of this theoretical paper is to scrutinize the possible implications of organizational health for sustainable management and leadership in health care organizations.

### **Material and methods**

Informed by postmodern hermeneutics with its critical insights into value conflicts in postmodern organizations<sup>6,7</sup>, the application of both nomothetic and ideographic approaches is required. While a nomothetic approach allows for the relevant and universal knowledge from organizational and management theory, an ideographic approach seeks specific knowledge limited to management and leadership in health care settings.

### **Results**

Hybridization may be a sustainable strategy for clinicians as managers<sup>8,9</sup> and organizations<sup>10</sup>. It may even be a condition for the survival of professions<sup>11</sup>. The hybrid form is associated with polarization between different domains and values<sup>12</sup>, with New Public Management and its appurtenant economic values, and so more with organizational effectiveness than organizational health. Alternative implications of organizational health should therefore be considered. The analysis indicates that strategies associated with value based<sup>13,14</sup>, health promoting and servant forms of management<sup>15</sup>, point towards sustainable health care management and leadership.



## Conclusion

This paper argues that different forms of health management and leadership can promote organizational health and the human and social dimension of sustainability in health care organizations. This alternative approach may have theoretical as well as practical aims. In addition to the value based, health promoting and servant forms of management, the altruistic, transformative, appreciative, communicative, and caritative leadership<sup>16,17</sup> forms may be valid through their strong orientation towards human values<sup>18</sup>. These management strategies could also be scrutinized in future research and inform a revised conceptualization of implications of health care management and leadership on organizational health in health care organizations.

## References

1. Schroeder, K. (ed., 2013). *A Vision for Sustainable Healthcare*. In *Sustainable Healthcare*. Chichester, West Sussex: John Wiley & Sons.
2. Orvik, A. & Axelsson, R. (2012). Organizational health in health organizations: towards a conceptualization. *Scandinavian Journal of Caring Science*; 26 (4): 796-802
3. Pelikan, J., Schmied, H. & Dietscher, C. (2014). Improving Organizational Health: The Case of Health Promoting Hospitals. In: Bauer, G.F. & Hämmig, O. (Eds.). *Bridging Occupational, Organizational and Public Health. A Transdisciplinary Approach*. Dordrecht: Springer.
4. Crawford, P., Brown, B., Baker, C., Tischler, V. & Abrams, B. (2015). *Health humanities*. London: Palgrave.
5. Almlund, P. & Holm, J. (2016). Post Rio and Ottawa Policy: Health Promotion and Sustainable Development Compared. *The Journal of Transdisciplinary Environmental Studies*; 14(2): 19-35.
6. Vattimo, G. (1997). *Utöver tolkningen: hermeneutikens betydelse för filosofin*. (Beyond the interpretation: The significance of hermeneutics for the philosophy). Göteborg: Daidalos.
7. Selander, S. (2005). Diakritisk hermeneutik och samhällsvetenskapernas interpretativa karaktär. (Critical hermeneutics and the interpretative character of social sciences). In: Selander, S. & Ödman, P. (red.). *Text och existens: hermeneutik möter samhällsvetenskap*. Göteborg: Daidalos.
8. Witman, Y., Smid, G.A.C., Meurs, P.L. & Willems, D.L. (2011). Doctor in the lead: balancing between two worlds. *Organization*; 18 (4): 477-495.
9. Pettersen, I.J. & Solstad, E. (2014). Managerialism and Profession-Based Logic: The Use of Accounting Information in Changing Hospitals. *Financial Accountability & Management*; 30 (4): 363-382
10. Kurunmäki, L. (2004). A hybrid profession - The acquisition of management accounting expertise by medical professionals. *Accounting, Organizations and Society*; 29: 327-347.
11. Färltholm, Y. & Nilsson, K. (2011). Entreprenörskap och hybridisering av lärarprofessionen i en intraprenad. (Entrepreneurship and hybridization of the teaching profession in contract agreements). *Nordiske Organisasjonsskrifter*; 13 (2): 74-93.
12. Jacobs, K. (2005). Hybridisation or Polarisation: Doctors and Accounting in the UK, Germany and Italy. *Financial Accountability & Management*; 21 (2): 135-162.
13. Busch, T. & Murdock, A. (2014). *Value-based Leadership in Public Professions*. New York: Palgrave Macmillan.
14. Jørgensen, T.B. (2006). Value consciousness and public management. *International Journal of Organization Theory and Behavior*; 9, 510-536.
15. Greenleaf, R.K. (2008). *The Servant as Leader*. Westfield: The Greenleaf Center for Servant Leadership.
16. Foss, B. (2012). *Ledelse: en bevegelse i ansvar og kjærlighet*. (Leadership – a movement in responsibility and love). Doktoravhandling. Åbo: Åbo Akademi Förlag.
17. Bondas, T.E. (2003). Caritative leadership. *Ministering to the patients. Nursing Administration Quarterly*; 27 (3): 249-53.
18. Orvik, A. (2016). *Conceptualizing Organizational Health – Public Health Management and Leadership Perspectives*. PhD-thesis. Aalborg: University of Aalborg.

## Session 8: Quality & skills

### **Embedding evidence-based practice among nursing undergraduates. Results from a pilot study**

Beate André, Associate Professor, PhD, RN.  
Faculty of Medicine and Health Sciences, Department of Public Health and Nursing,  
Norwegian University of Science and Technology (NTNU), Norway, NTNU Center for  
Health Promotion Research.

#### **Background**

Evidence-based practice is currently one of the most important developments in health care. Research in nursing science is rapidly growing; however, translating the knowledge based on this research into clinical practice is often hampered, and may be dependent on reflective skills.

#### **Aim**

The aim of this study was to see how undergraduate nursing students in nursing should increase their skills and knowledge related to evidence-based practice through participation in clinical research projects.

#### **Method**

A qualitative approach was used in collecting and analyzing the data. Students participated in a pilot clinical research project and a received guidance related to their bachelor thesis. After the project was completed, all students filled in a questionnaire.

#### **Results**

The students' motivation to participate in this study was reported to be high, but they reported low knowledge related to evidence-based practice. All students reported that their attitude towards evidence-based practice changed in a positive direction during their participation in the project.

#### **Conclusion**

Evidence-based practice influenced nursing practices by putting more focus on critical thinking, increasing pride and giving a sense of ownership in the clinical field. The curricula and the pedagogical perspectives in nursing education can influence the attitude towards evidence-based practice and skills among nursing bachelor students.

## Monitoring the care of a diabetic for effective policy in lifestyle guidance

Dalbom Linda, Master of Health Care, Clinical Research Centre, Turku University Hospital  
 Löfgren-Kortela Monica, Master of Health Care, Clinical Research Centre, Turku University Hospital

Rautava Päivi, MD, Ph.D. Clinical Research Centre, Turku University Hospital

### Introduction

Type 2 diabetes, a Finnish population disease, develops through the combination of lifestyle and genotype. In order to achieve a good balance of care among diabetics, the healthcare services must be targeted to specific groups. At its best, it is a process where nutrition and exercise counseling emphasizes the strengthening and empowerment of the patient to care for themselves.

Up-to-date data is necessary for high quality care, research and knowledge management. Congruent recordkeeping is the key to having functional national information services, gathering up-to-date data and measuring the effectiveness of the services. In the future, such databases enable the monitoring the care of a diabetic on a provincial basis.

The instructions on standardized recording helps professionals to make entries correctly, which will guarantee that the entries of the diabetic care are comparable.

### Aim

The aim is to try to gather the following information on each diabetic patient:  
 Height; Weight; Waistline; Cholesterol: LDL, HDL; HbA1c (%); Blood pressure  
 Consumption of alcohol (AUDIT: Alcohol Use Disorders Identification Test)

Quantitative indicators give information on the current state of an individual diabetic but they also make it possible to study the effectiveness in the follow-up data and plan for the future goals.

### Material and methods

The instructions on standardized recording were agreed on in a working group with health informatics, academic and clinical competence. The instructions will be sent to every municipality (N=27) and help will be provided in the startup if needed.

A register study is carried out in order to compare and to follow up the recordkeeping and the care of a diabetic of regionally. Developmental activities such as municipalities' commitment to follow standardized recordkeeping will be evaluated.

### Results

Short-term results can be reported at the end of 2018, long-term at the end of 2019.

### Conclusions

Description of the success of monitoring the care of a diabetic on a provincial basis with the multi-professional co-operation. The target is, that every municipality in the region has a congruent and effective policy in lifestyle guidance.

## The relationship between participative safety in teams and quality of care

Laura Hietapakka<sup>1</sup>, Timo Sinervo<sup>1</sup>, Salla Lehtoaro<sup>1</sup>, Anu Kaihlanen<sup>1</sup>, Tarja Heponiemi<sup>1</sup>

<sup>1</sup> National Institute for Health and Welfare in Finland

### Introduction

Well-functioning health and social care requires cooperation of professionals from multiple disciplines. Recent research shows that failures in teamwork and communication can lead directly to compromised patient care. Risks for this sort of failures may be intensified in circumstances when large organizational changes are being implemented.

### Aim

Aim of this study was to investigate, whether the perceived level of participative safety within a team (one dimension of Team Climate Inventory) was associated with perceived improvement of the quality of care.

### Material and methods

The study is a part of an ongoing 'Competent workforce for the future' -project (COPE) which aims to identify relevant changes and new competencies needed in future health and social care. The data were collected in 2017 from the personnel of three organizations located in large health and social care districts in Finland. Altogether the data consist of 1943 respondents (mean age 45.5, SD=11.0, 88.6 % women, 67.8 % had been working within health and social care for more than 10 years). Of the respondents, 611 were registered nurses (including also public health nurses, midwives and paramedics) and 115 were physicians (including also dentists). The association between participative safety ( $\alpha=.92$ ) and quality of care were analyzed using linear regression analysis, combined and separately among registered nurses and physicians.

### Results

Better participative safety was related to perceived improvement of the quality of care ( $p<.001$ ). Among physicians ( $\beta=-.33$ ) the association between participative safety and perceived improvement of the quality of care was higher than among nurses ( $\beta=-.25$ ), when adjusted for gender, age and tenure.

### Conclusions

Ensuring that interaction between team members in healthcare takes place in a participative and interpersonally non-threatening climate is an important factor in improving quality of care.